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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,403	09/04/2003	Jukka Vayrynen	872.0156.U1(US)	7403
29683	7590	05/05/2005	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			LIU, SHUWANG	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/656,403

Applicant(s)

VAYRYNEN ET AL.

Examiner

Shuwang Liu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 09/04/ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09/08/03</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Fischer et al. (US 2003/0160654).

As shown in figures 1-3, Fischer et al. discloses a method and a transmitter to operate a dual mode multi-timeslot R.F transmitter, comprising:

(1) regarding claims 1 and 8:

prior to a first timeslot, setting a plurality of control signals ( from 20) for the RF transmitter in accordance with a first modulation format (GMSK) used during the first timeslot (0027-0029); and

during a guard period between the first timeslot and a next, temporally adjacent timeslot, setting the plurality of control signals for the RF transmitter in accordance with a second modulation format (8-psk) used during the second timeslot, where the first modulation format differs from the second modulation format (0027-0029 and 0013).

(2) regarding claim 2:

where one of the pluralities of control signals is coupled to an RF attenuator (100) having an output that is coupled to an input of a power amplifier (80).

(3) regarding claim 3:

where one of the plurality of control signals (via 100) sets a power amplifier quiescent current (abstract, 0013 and 0028).

3. Claims 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Sander et al. (US 2004/0208157).

As shown in figures 14-20, Sander et al. discloses a method and a transmitter to operate a dual mode multi-timeslot R.F transmitter, comprising:

prior to a first timeslot, setting a plurality of control signals ( from 1840) for the RF transmitter in accordance with a first modulation format (GMSK) used during the first timeslot (see claim 1); and

during a guard period between the first timeslot and a next, temporally adjacent timeslot, setting the plurality of control signals for the RF transmitter in accordance with a second modulation format (EDGE, for example, QAM or 8-psk) used during the second timeslot, where the first modulation format differs from the second modulation format (claim 1 and abstract).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. in view of Numanami et al. (US 6,617,927) and Lipschutz (US 5,068, 833).

Fischer et al. discloses all of the subject matter as described above regarding claim 1 except for specifically teaching one of the plurality of control signals controls power amplifier gain and one of the plurality of the control signals sets one of variable gain power amplifier mode and a fixed gain power amplifier mode.

Numanami et al., in the same field of endeavor, teaches one of the plurality of control signals controls power amplifier gain (see 12, 14 A2 and A3 in figure 6) and one of the plurality of the control signals (see 12, 14 A2 and A3 in figure 6) sets one of variable gain power amplifier mode ( linear action which inherits to be variable gain, see 60 in figure 6 of Lipschutz) is and a fixed gain power amplifier mode ( nonlinear action or saturated action which inherits to be fixed gain, see 62 in figure 6 of Lipschutz) (column 2, line 30-column 3, line 20 and column 9, line 11-column 10, line 60).

It would be desirable to have a smaller size amplifier, controlled by a control signal, to be used in both GSM system and EDGE (8-psk) so as to reduce cost (column 12, lines 62-column 13, line 7). Therefore, it would have been obvious to one of

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ordinary skill in the art at the time of the invention to have a control signal to set one of variable gain power amplifier mode and a fixed gain power amplifier mode as taught by Numanami et al. in the transmitter of Fischer et al. in order to allow the transmitter to have a smaller size amplifier used in both GSM and EDGE system so as to reduce the cost of the transmitter and increase efficiency of the transmitter.

6. Claims 9-11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. in view of Vanhecke (US 5,216, 384).

Fischer et al. discloses all of the subject matter as described above regarding claims 1-3 except for specifically teaching a programmable power amplifier as claimed.

Vanhecke, in the same field of endeavor, teaches a programmable amplifier as shown in figure 1.

It would be desirable to have a very good bandwidth, noise factor, compression and transistor matching by using a programmable amplifier (column 1, lines 37-43 and column 6, lines 3-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the programmable power amplifier as taught by Vanhecke in the transmitter of Fischer et al. in order to allow the transmitter to have a bandwidth efficient, a lower noise factor, and a better compression.

7. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. and Vanhecke (US 5,216, 384) as applied to claim 9 above, further in view of Numanami et al. (US 6,617,927) and Lipschutz (US 5,068, 833).

Fischer et al. discloses all of the subject matter as described above regarding claim 1 except for specifically teaching one of the plurality of control signals controls power amplifier gain and one of the plurality of the control signals sets one of variable gain power amplifier mode and a fixed gain power amplifier mode.

Numanami et al., in the same field of endeavor, teaches one of the plurality of control signals controls power amplifier gain (see 12, 14 A2 and A3 in figure 6) and one of the plurality of the control signals (see 12, 14 A2 and A3 in figure 6) sets one of variable gain power amplifier mode ( linear action which inherits to be variable gain, see 60 in figure 6 of US 5,068, 833 to Lipschutz) is and a fixed gain power amplifier mode ( nonlinear action or saturated action which inherits to be fixed gain, see 62 in figure 6 of Lipschutz) (column 2, line 30-column 3, line 20 and column 9, line 11-column 10, line 60).

It would be desirable to have a smaller size amplifier, controlled by a control signal, to be used in both GSM system and EDGE (8-psk) so as to reduce cost (column 12, lines 62-column 13, line 7). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a control signal to set one of variable gain power amplifier mode and a fixed gain power amplifier mode as taught by Numanami et al. in the transmitter of Fischer et al. and Vanhecke in order to allow the transmitter to have a smaller size amplifier used in both GSM and EDGE system so as to reduce the cost of the transmitter and increase efficiency of the transmitter.

8. Claims 7 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. and Numanami et al. (US 6,617,927) as applied to claim, further in view of Sander et al. (US 2004/0208157).

Fischer et al. discloses all of the subject matter as described above regarding claims 1 and 4-7 except for specifically teaching a control signal which is ramped between a base level and a controlling level during the guard period as claimed.

Sander, in the same field of endeavor, teaches a control signal is ramped between a base level and a controlling level during the guard period (abstract, 0055-0063 and claim 1).

It would be desirable to switch multiple modulation modes in real time so as to reduce the power consumption (005-0012, Sander et al.). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a control signal which is ramped between a base level and a controlling level during the guard period, as taught by Sander et al. in the transmitter of Fischer et al. in order to allow the transmitter to have lower power operation and true multi-mode operation enabling mode switching to be done in real time.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al., Numanami et al. (US 6,617,927), Sander et al. (US 2004/0208157) as applied to claim 7 above, further in view of Vanhecke (US 5,216, 384).

Fischer et al. discloses all of the subject matter as described above regarding claims 1-3 except for specifically teaching a programmable power amplifier as claimed.



Vanhecke, in the same field of endeavor, teaches a programmable amplifier as shown in figure 1.

It would be desirable to have a very good bandwidth, noise factor, compression and transistor matching by using a programmable amplifier (column 1, lines 37-43 and column 6, lines 3-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the programmable power amplifier as taught by Vanhecke in the transmitter of Fischer et al. in order to allow the transmitter to have a bandwidth efficient, a lower noise factor, and a better compression.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is 571 272-3036. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shuwang Liu  
Primary Examiner  
Art Unit 2634

April 29, 2005